REMARKS

This communication is in response to the final Office Action mailed on January 3, 2003. In the Office Action, claims 28-29, 34-35, 41-42, and 80-99 were pending. Claims 28-29, 34-35, 41-42, and 80-83 were withdrawn from consideration. Claims 93-99 were allowed. Claims 84-88 and 90-92 were rejected. Claim 89 was objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form.

Claims 84-88 and 90-92

The Office Action reports that claims 84, 85, 87, 88 and 91 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,601,895 to Cunningham (hereinafter Cunningham) or, in the alternative, obvious under 35 U.S.C. § 103(a) in view of Cunningham.

Claim 84 has been amended and recites a fabric assembly comprising a flexible substrate having a top surface; and a plurality of --continuous, non-overlapping-- metal plates having substantially uniform thickness of approximately 2-5 mils, the plurality of metal plates affixed to the top surface of the flexible substrate and arrayed in a pattern such that a plurality of gaps are defined between adjacent affixed plates, wherein the gaps are approximately uniform in width, and wherein the gap width is approximately 2-5 mils.

The Office Action reports that Cunningham discloses a flexible puncture proof material used in gloves, the puncture proof material providing a base layer that would act as a flexible substrate and metal plates bonded to the base layer.

It is believed that the base layer 40 in Cunningham and the metal plates, especially hexagonal discs 102 in FIG. 6, are patentably distinct from the flexible substrate and metal plates, respectively, recited in claim 84.

The Office Action points to Column 6, lines 50-51 of Cunningham which provides, "A base layer 40 can be provided, which

can be fabricated of a woven material such as a steel mesh or a Kevlar weave." However, applicants point out that subsequently Cunningham at Col. 6, lines 52-59 provides:

> "... The purpose of the base layer 40 is to provide a spacer if capture of a sharp instrument occurs in the deepest layer of the capture devices. For example, if only three layers of capture devices are used, and capture occurs in the third layer of capture devices, then the base layer 40 would prevent a point that slightly protrudes from the capture device from penetrating the entire puncture proof material..."

Therefore, it is submitted that the base layer 40 is not a substrate on which the metal plates are affixed as in claim 84 but is a spacer used to present the tip of a sharp instrument from penetrating the material.

Also, FIG. 1 of Cunningham clearly shows base layer 40 as decoupled and spaced apart from the plurality of plates, and therefore, does not have the structure of "the plurality of metal plates affixed to the top surface of the flexible substrate" as recited in claim 1. In Cunningham, it appears that flexible medium 22 encapsulates the metal plates, and therefore, the medium 22 is in contact with and affixed to base layer 40, not the encapsulated metal plates.

Additionally, claim 84 has been amended to further recite that the metal plates are --continuous-- and --non-overlapping--. It is believed that these amendments further clarify and patentably distinguish the present invention recited in claim 84 from the sheet assembly in Cunningham. For instance, the Cunningham plates have apertures, such as apertures 104 shown in FIG. 6. Therefore, the Cunningham plates are not believed to be continuous, as recited in claim 1. Further, Cunningham uses multi-layered plates for puncture resistance, such as shown in FIG. 1, so as not to be considered non-overlapping.

In light of the foregoing remarks, it is submitted that

claim 84 is allowable over Cunningham. Claim 86 was amended so that the thickness of the plates is approximately 2 mils rather than no greater than 2 mils. Claims 85-88 and 90-92 depend from claim 84 and are believed to be separately patentable. Reconsideration and allowance of claims 84-88 and 90-92 are respectfully requested.

New claims

Claims 100-112 are new, of which, claims 100 and 106 are independent. The subject matter of these claims was previously presented at least in claims 1, 6, 7, 47, 48 and 59 and supported at least by FIGS. 9-12B, 15B, 19B, 21B, 24A-24C and description as originally filed. It is noted that claim 48 as originally filed was incorrectly listed as being dependent on claim 41 and instead should have been made dependent on claim 47. It is further noted that the written description provides support for varying the plate pattern, shape (such as hexagonal), size, and gap depending on the particular design at page 17, lines 27-35.

Claims 100-105 are an additional embodiment of the present inventions. Independent claim 100 is a fabric assembly comprising a stack of three layers. Each layer comprises a flexible substrate and a plurality of continuous, non-overlapping plates affixed to a top surface of the substrate, wherein each plurality of plates is arrayed in a pattern such that a plurality of gaps are defined between adjacent plates. It is noted that the written description provides support for a three-layer fabric assembly of claim 100 at least at page 12, lines 24-34.

Claim 101 depends on claim 100 and includes hexagonal plates made of polymeric resin and a gap size in the range of 5-20 mils. Support for hexagonal plates is found at least at page 13, line 4. Support for polymeric resin is found at page 14, lines 12-24. Support for the gap width is found at page 13, line 6; page 14, line 4; page 16, line 4; page 31, lines 28-35; and page 36, line 34 as well as general statements at least at page 17,

lines 27-35 that gap width is one of the parameters selected depending on design considerations.

Claim 102 adds a plate thickness in the range of 5 mils to 20 mils. Support for claim 102 is found at page 13, line 4. Claim 103 a includes hexagonal plate diameter in the range of about 60 to 80 mils. Support for claim 103 is found at least at page 13, lines 4-5; page 34, lines 31-33; and page 36, line 34 as well as the general statement at least at page 17, lines 27-35 that plate diameter is a parameter selected depending on design.

Claims 104 provides that one at the pluralities of plates has a larger gap width and plate diameter than the other two pluralities of plates. Claim 105 depends on claim 104 and further recites that the other two pluralities of plates each have a plate diameter in the range of 60 mils to 80 mils. Claims 104 and 105 are supported with the general statements at least at page 17, lines 27-35 that gap width and plate diameters are selected depending on design. Claim 105 is additionally supported with support for claim 103 incorporated herein.

Claims 106-112 are another embodiment of the present inventions. Independent claim 106 is a two-layer fabric assembly. Each layer comprises a flexible substrate and a plurality of continuous, non-overlapping plates affixed to a surface of the substrate. Claim 106 further provides that the two pluralities of plates are opposite facing. As discussed above, support for selecting plate size and shape, gap size, and plate thickness was provided at page 17, lines 27-35. Plates that are opposite facing are shown at least in FIGS. 4A, 8A, 8B, 10A, 10B, etc.

Claim 107 further includes a third substrate between the first and second flexible substrates. Support for claim 107 is found at least at layer 72 shown in FIG. 19B and corresponding sections of the written description. Claim 108 depends on claim 107 and further defines the third substrate as comprising a woven fabric. Woven fabric is disclosed at least at page 4, lines 23-

24.

Claim 109 depends on claim 108 and further defines the first and second substrates as comprising a woven fabric and the plates as comprising polymeric resin. Support for polymeric resin plates and woven fabric was given for claims 101 and 108, respectively, and is incorporated by reference herein. Claim 110 depends on claim 108 and further defines the third substrate as comprising nylon. Support for nylon fabric is found at page 10, lines 10-12.

Claim 111 further defines plate shape as hexagons having a diameter equal or greater than 80 mils, the diameter selected to maintain flexibility and puncture-resistance of the fabric assembly. Support for both plate shape and diameter was provided for claims 101 and 103 and is incorporated herein as well as the general statement at least at page 17, lines 27-35 that these parameters are selected based on design.

Claim 112 provides that each plurality of gaps is in the range of 10-20 mils. Support for this gap width was also provided for claim 101 above and is herein incorporated by reference.

In light of the foregoing new claims 100-112 are presented for examination and favorable action.

A Petition for Extension of Time is hereby requested with a charge authorization for the fee provided herewith.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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MARKED-UP VERSION OF REPLACEMENT CLAIMS

84. (Amended) A fabric assembly comprising:

a flexible substrate having a top surface; and

a plurality of continuous, non-overlapping metal plates having substantially uniform thickness of approximately 2 to 5 mils, the plurality of metal plates affixed to the top surface of the flexible substrate and arrayed in a pattern such that a plurality of gaps are defined between adjacent affixed plates, wherein the gaps are approximately uniform in width, and wherein the gap width is approximately 2 to 5 mils.

86. (Amended) The fabric assembly of claim 84 wherein the substantially uniform thickness of the plurality of plates is approximately ~~no greater that~~ 2 mils.